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ABSTRACT

In the area of cognitive skills, the actual differences between males and females are relatively small. Females score slightly higher on verbal tasks and males score slightly higher on mathematical tasks. According to the cognitive approach to stereotypes, people should perceive these differences to be quite large. To determine whether subjects would estimate large differences between females and males in verbal and mathematical performance, 101 college students estimated the average scores for females and males in their freshman class on the verbal and mathematical portions of the Scholastic Aptitude Test (SAT). Subjects also completed the Bem Sex-Role Inventory (BSRI). The results indicated that both female and male subjects judged that females would do significantly better on the verbal portion and that males would do significantly better on the mathematical portion of the SAT. Further analyses demonstrated that female and male subjects did not differ in the extent of their stereotyping. Sex-typed individuals (feminine females and masculine males), as identified by scores on the BSRI, showed no greater tendency to stereotype than did other individuals. (Author/NRB)

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GENDER-STEREOTYPING OF COGNITIVE ABILITIES

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Abstract

Subjects estimated the average scores for females and males in their freshman class on the verbal and mathematical portions of the SAT. Both female and male subjects judged that females would do significantly better on the verbal portion and that males would do significantly better on the mathematical portion. Further analyses demonstrated that female and male subjects did not differ in the extent of their stereotyping. Also, sex-typed individuals (feminine females and masculine males), as identified by scores on the Bem Sex-Role Inventory, showed no greater tendency to stereotype than did other individuals.

Gender-Stereotyping of Cognitive Abilities

A gender stereotype is a structured set of beliefs about the personal attributes of women and men (Ashmore & Del Boca, 1979). According to the cognitive approach to gender stereotypes, people tend to exaggerate between-group differences (Hamilton, 1979).

The exaggeration of the difference between women and men is particularly impressive in experiments in which subjects are asked to evaluate a single item that has been attributed to either a male or a female. The prototypical study asked students to rate a professional article that was sometimes labeled with a male author's name and sometimes labeled with a female author's name (Goldberg, 1968). In reality, of course, there was no difference in the quality of the article. However, the students rated the article more positively when they believed that it had been written by a man. Although there have been exceptions, most replications have tended to confirm the "Goldberg effect" (e.g., Paludi & Bauer, 1983; Wallston & O'Leary, 1981).

In the area of cognitive skills, the actual differences between males and females are relatively small. For example, females score slightly higher on verbal tasks, and males score slightly higher on mathematical tasks (e.g., Hyde, 1981). According to the cognitive approach to stereotypes, people should perceive the difference to be quite large. However, this hypothesis has not yet been tested. One purpose of the present study was to determine whether subjects would estimate large differences between females and males in verbal and mathematical performance. SAT scores were selected because they are the verbal and mathematical performance measures most familiar to undergraduates. We expected o find that subjects would judge females to be superior in verbal performance and males to be superior in mathematical performance.

A second purpose of this study was to examine the relationship between sex-typing and the exaggeration of between-group differences. Bem (1981) suggested that sex-typed individuals (feminine females and masculine males) are particularly likely to process information in terms of a gender schema. For example, she found that sex-typed people were more likely than other individuals to show gender clustering in free recall. They also rated themselves more quickly on sex-congruent attributes, in comparison to other individuals. The majority of other research has supported the idea that sex-typed individuals make greater distinctions between males and females in their cognitive processes (Deaux & Major, 1977; Kail & Levine, 1976; Liben & Signorella, 1980; Lippa, 1977; Mills, 1983). However, some studies have not detected differences between sex-typed and other individuals (Mills & Tyrrell, 1983; Spence & Helmreich, 1978). None of these studies has examined whether sex-typed individuals are particularly likely to exaggerate sex differences in cognitive skills. Our study investigated this topic.

Method

A total of 101 students from introductory psychology classes (43 males and 58 females) participated in the study.

Students first completed a booklet asking them to estimate SAT scores for various groups of freshmen on campus. The first two questions in a representativ booklet were: 'Suppose that the average score of males on the verbal part of the SAT is 498. What would you estimate is the average score of females on the verbal part of the SAT?" and "Suppose that the average score of females on the mathematical part of the SAT is 534. What would you estimate is the average scores of males on the mathematical part of the SAT?" (In each case, the listed average was the actual SAT average for the freshman class.) Both

task order and the sex whose score was supplied were counterbalanced across subjects. The booklet also contained four filler items. The students then completed the Bem Sex-Role Inventory (1974). Their scores were categorized according to the median-split method, yielding 41 sex-typed, 18 cross-sex-typed, 21 androgynous, and 21 undifferentiated subjects.

Results

A verbal-ability stereotyping score was derived for each subject by subtracting the estimate for the male verbal SAT score from the etimate for the female verbal SAT score. A mathematical-ability stereotyping score was derived by subtracting the estimate for the female mathematical SAT score from the estimate for the male mathematical SAT score. Thus, positive scores indicate that a person thought that females are better than males on a verbal task or that males are better than females on a mathematical task. Table 1 shows the averages.

Table 1 about here

If people thought that females and males were equally competent on a task, the average stereotyping score would be zero. Four t-tests were conducted to determine whether the average stereotyping scores differed significantly from zero. As indicated in Table 1, both female and male subjects had average stereotyping scores for both verbal and mathematical tasks that were significantly greater than zero.

These analyses provided evidence that people hold gender stereotypes about cognitive ability. Are either sex of subject or sex-typing related to the degree of stereotyping that a person shows? A 2 x 2 x 2 mixed-subjects analysis of variance was conducted, with the two between subject variables being of subject and sex-typing category (sex-typed subjects versus all others, following Bem's 1981 analysis). The within-subject variable was nature of task (verbal vs.

mathematical). All Fs for main effects and interactions were below 1.00. In other words, female and male subjects did not differ in their tendency to stereotype cognitive abilities. Furthermore, sex-typed subjects were no more likely than other people to stereotype cognitive abilities.

Discussion

This study demonstrated that people believe that females are substantially more competent than males on a verbal task and that males are substantially more competent than females on a mathematical task. Furthermore, males and females show similar stereotyping. Contrary to the findings of Bem (1981) and many others, however, feminine females and masculine males showed no more stereotyping than did other individuals. As Mills and Tyrrell (1983) have noted, sex-typed individuals may differ from others only when it is inappropriate or counter-productive to make gender distinctions. In the case of estimating SAT scores, demand characteristics of the situation may suggest that it is highly appropriate to make gender distinctions.

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Table 1. Average Stereotyping Scores (i.e., Estimated Size of the Sex Difference)

Sex of Person Making Estimates	Type of SAT Score: Verbal	Type of SAT Score: Mathematical
Female	Females estimated to be 22.5 points better than males. [$t(57) = 8.15$, $p < .001$]	Males estimated to be 19.9 points better than females. [$t(57) = 7.62$, $p < .001$]
Male	Females estimated to be 19.7 points better than males. [$t(42) = 5.97$, $p < .001$]	Males estimated to be 21.5 points better than females. [$t(42) = 5.03$, $p < .001$]